

ABSTRACT

[000132] The present invention relates to a safe, simple, compact synthetic and potentially non-toxic vector that is comprised of two or more complementary strands of chemically-synthesized deoxyribonucleic (DNA) acid that, when annealed to one another, form a cassette for the efficient expression of single-stranded or double-stranded ribonucleic acid (RNA) molecules. The RNA molecules expressed from this synthetic vector may function as ribozymes, as antisense molecules, or as short, interfering RNA molecules. Alternatively, the RNA molecules may encode therapeutic or antigenic peptides, polypeptides, or proteins. This synthetic vector may be employed for the rapid screening of various candidate RNA molecules for their efficacy in gene silencing or other functions, or for the delivery of RNA molecules in therapeutic applications.